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09/848,402	05/04/2001	Bogdan Serban	33918R008	9004

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EXAMINER	
EASTHOM, KARL D	
ART UNIT	PAPER NUMBER
2832	

DATE MAILED: 07/07/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/848,402	Applicant(s) SERBAN ET AL.	
	Examiner Karl D Easthom	Art Unit 2832	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 June 2003*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *15-43* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *15-43* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless --
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 15, 19-20, 23, and 25-27 are rejected under 35 U.S.C. 102(b) as being anticipated by Fukui et al. Fukui et al. discloses the claimed invention at Fig. 43 with semiconductive stretch sensitive material 72' and electrodes 74' (see Fig. 42) with the cloth 81 having the bottom surface of the electrodes 74' in intimate contact therewith. Col 24 states, "Fig. 43 is a conceptional illustration of the whole product of the present invention stitched with stretchable cloths at both surfaces of the stretch sensitive electrodonductive device". No elastomer sheets or break down films are shown as regards Fig. 43. Col. 24, lines 19-26 indicates "a cloth...fabric... may be adhered or stitched onto at least one surface". This is exactly what is shown in Fig. 43, so that, from the bottom, the cloth, the electrodes, and then the stretch sensitive material appears in that order, either when one flips the device or even if one does not flip it. The electrode portion 74 ' is in intimate contact with fabric 81, as evidenced by the stitching 82 going around and through the electrode, through the stitching. That is, Fig. 43 is similar to the Fig. 41 device except a fabric 81 is stitched to both surfaces of the device, and the part 71" is missing. In claims 19-20, the support is woven or unwoven fabric at col. 24, lines 19-26. In claim 23, the coating 72' is stuck on the electrodes, and the elastomer is disclosed at col. 13, lines 25-40. In claim 25, the bottom stitching 81 meets the claim where the device has two stitchings, or the

coating or plating at cols. 6-7 meets the claims. For claims 26-27, the seat detector is disclosed at col. 21, lines 50-52.

3. Claims 15 and 42 is rejected under 35 U.S.C. 102(b) as being anticipated by Taylor et al. (WO 97/18450). The claimed invention is disclosed at Figs. 27-29 where the electrode structures 233 on a flexible fabric sock 221, and semiconducting material 222 in contact therewith. The upper extremities are as disclosed for claim 42.

4. Claims 18, 31, and 36-42 are rejected under 35 U.S.C. 102(b) as being anticipated by Reinhold et al. (DE 42374702). The claimed invention is disclosed at Fig. 4a, according to the English comments by the of the PCT examiner in the international preliminary examination report. That is the semi-conductor layer is in close contact with the electrode structures, where elements 12 appear to be the divided zones on electrodes 13. In claim 36, there is a printing operation. In claim 37 the elastomer is "deposited" on the structures and first surface where the opposite polymer sheet is placed upon the other.

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in sect-ion 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 26-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukui in view of Reinhold et al. (DE 42374702). Fukui discloses the claimed invention except the seat. Reinhold discloses a vehicles seat sensor for detecting a person on a seat. It would have been obvious to employ the sensor of Fukui in a vehicle where Reinhold teaches use of such a sensor

therefor and Fukui discloses use of the detector to detect the presence of persons in other settings.. In claims 27-29 , the sensor of Reinhold is all over the seat, including a portion where the head would rest.

7. Claims 15-17, and 19-23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kirby in view of Fukui et al. Kirby at the sole figure or Franz at Figs. 1 or 10 (see above) disclose the claimed invention except the fabric as the insulating support. Fukui discloses stretch sensitive inks employed on a fabric at col. 5 in order to detect minute changes, and discloses use in a diaphragm for pressure sensing at col. 21, lines 64-67. The inks of Kirby, at col. 13, lines 24-45, are also disclosed as useful on a diaphragm at col. 4, lines 35-44, but. In claim 22 etching is a known way of creating conductors, and it would have been obvious to employ such a method for that purpose. Alternatively, etching is not required since the end product would not differ by the manner of removing material. Kirby discloses inks, and elastomers, and printing at col. 3, meeting claims 16-17, 21-23. It would have been obvious in view of Fukui to employ the ink of Kirby on the Fukui fabrics in order to detect minute changes, where both reference disclose using the devices on diaphragms for pressure sensing, and Kirby discloses using the ink and electrodes with different types of flexible supporting members at col. 4, lines 35-40.

8. Claims 18, 24, 30, 31, 34-35, and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukui et al. in view of Suski or Franz. Fukui discloses the claimed invention as noted above at Fig. 43 except the zones. Franz discloses different zones 364 as noted above, in order to have parallel sensors spread over the surface. Franz discloses such a sensor is useful

for detecting generally the position between two apparatus or a degree of bend at col. 3, lines 40-45. Suski discloses the same type of use at col. 21 ,lines 5-67 where a wide variety of bend sensor applications are employed. It would have been obvious to employ the zones of Suski in the device of Fukui et al. for the purpose of using parallel resistors to detect a wider area of bend.

Using the zones of Suski in the Fukui Fig. 43 embodiment would result in the stitched fabric 81, both woven and nonwoven with fibers (claims 34-35) (col. 24, lines 15-26), to cover the electrodes 370 and zones 364 of Suski in the manner claimed.

9. Claims 15, 24, 30-33, and 42-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suski in view of Franz or Kirby. Suski discloses the claimed invention at Fig. 8 except for the active sensor zones 366 in contact with the upper surfaces of the electrode structures 370. Franz discloses at Fig. 1 employing the electrode structures first with the resistors on top thereof. It would have been obvious to employ the tactic where Franz teaches that is preferable at col. 5, lines 14-16 and there is only two choices for which layer goes first. Franz also discloses the electrode structure first at Fig. 10. For claims 24, and 33, the flexible 362 is a "fabric" where there is no definition of same. Kirby discloses the electrodes first at the sole figure, suggesting that resistors or the electrodes can be printed first. The cable having nonwoven fibers (wires) molded together meet the definition of "fabric".

10. Applicant's arguments filed 6/4/03 have been fully considered but they are persuasive only in part, or are moot. The argument that Franz does not have resistance that varies with deformation of the layer is accepted. As to Fukui, applicant argues that the insulation breakdown films and elastomers are present to preclude the invention. This is not correct. Fig.

43 represents: a fabric, a semiconducting material/fabric stitched to the fabric and having electrodes on both sides of the semiconducting material fabric, and another cloth. The stitched fabric takes the place of the breakdown films and elastomer sheets. Col 24 states, "Fig. 43 is a conceptional illustration of the whole product of the present invention stitched with stretchable cloths at both surfaces of the stretch sensitive electrodonductive device". No elastomer sheets or break down films are shown or disclosed. The "whole product" refers to the electrodes. Further, col. 24, lines 19-26 indicates "a cloth...fabric... may be adhered or stitched onto at least one surface". This is exactly what is shown in Fig. 43, so that, from the bottom, the cloth, the electrodes, and then the stretch sensitive material appears in that order when one flips the device or even if one does not flip it. As to "clamping" of electrodes precluding the semiconducting material "on top" of the electrode, this is not correct, the clamping means the material is both on top and below the different electrode layers. Applicant's claim is open ended, so that more electrode material is not precluded. This is further evidenced by a claim such as that of claim 42. Applicant's arguments regarding another electrode layer of Taylor does not overcome the fact that the lower electrode layer has several electrodes upon which the semiconducting fabric touch, meeting the claim. As to Taylor, the passage at col. 4, lines 35-40, as note above, suggests different types of flexible substrates and both Kirby and Fukui disclose use on diaphragms further suggesting the modification. As to applicant's definition of fabric, applicant includes nonwoven fabrics as part of his definition. The examiner also accepts Applicant's definition of fabric, precluding simple plastics such as that of Franz. . However, the cable of Suski having nonwoven fibers (wires) molded together meet the definition of "fabric" as supplied

by Applicant. Note that the dictionary also employs " a material structure of connected parts" - fibers (wire) embedded in plastic such as that of Suski. As to the combination of Kirby, Fukui, Franz, and Suski, the motivation is noted where each reference discloses pressure sensitive resistive or force sensors, with at least three including flexible substrates and twp stretch sensors. That one may involve a more complicated process does not defeat the reasons for combination. As to DE'702, Applicant argues that there is "non-continuous contact." Applicant explains that "it may be the case that some of the protrusions of the semi-conducting layer might be in contact with the electrodes" so that there is no "intimate" contact. This is not clear. If there is contact, it is intimate and continuous.

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

KARL D. EASTHOM
PRIMARY EXAMINER

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karl Easthom whose telephone number is (703)308-3306. The examiner can normally be reached on M-Th. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Elvin Enad, can be reached on (703)308-7619. The fax phone number for the organization where this application or proceeding is assigned is (703)308-7722. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karl Easthom whose telephone number is (703) 308-3306.

KARL D. EASTHOM
PRIMARY EXAMINER